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YEAR 2000 COMPUTING ISSUES RELATED TO
HEALTH CARE IN DOD

Report No. 99-055   December 15, 1998

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Acronyms

ASD(C3I)	Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
ASD(HA)	Assistant Secretary of Defense (Health Affairs)
AIS	Automated Information Systems
D/SIDDOMS	Defense Medical Information System/Systems Integration, Design, Development, Operations and Maintenance Services
MTF	Military Treatment Facility
OMB	Office of Management and Budget
SHARP-G	Support Hardware and Automation Related Products-Generic
Y2K	Year 2000

December 15, 1998

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND,
                             CONTROL, COMMUNICATIONS, AND
                             INTELLIGENCE)
                          ASSISTANT SECRETARY OF DEFENSE (HEALTH
                             AFFAIRS)

SUBJECT: Audit Report on Year 2000 Computing Issues Related to Health Care in DoD
          (Report No. 99-055)

      We are providing this report for information and use. This report is one in a series of reports being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to identify progress made by DoD Components who are preparing information and technology systems for year 2000 compliance.

      This report represents the results of the first phase of this project. The second phase will involve followup on the issues and recommendations raised in this report as well as an expanded evaluation of testing and contingency plans, with special emphasis on biomedical devices. We welcome suggestions from management regarding any other issues on which we should focus the second phase of the audit.

      Comments from the Principal Deputy Assistant Secretary of Defense (Health Affairs) on a draft of this report were considered in preparing this final report. The Principal Deputy's comments concurred with the recommendations and conformed to the requirements of DoD Directive 7650.3; therefore, no additional comments are required.

      We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Michael A. Joseph at (757) 766-9108, email <mjoseph@dodig.osd.mil>, or Mr. Sanford W. Tomlin at (757) 766-3265, email <stomlin@dodig.osd.mil>. See Appendix B for the report distribution. The audit team members are listed inside the back cover.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Year 2000 Computing Issues Related to Health Care in DoD

Executive Summary

Introduction. This report is one of a series being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the year 2000 computing challenge. For a complete listing of audit projects, see the year 2000 webpage on the IGnet at http://www.ignet.gov.

Audit Objective. The audit objective was to determine whether planning and management are adequate to ensure that mission-critical health systems will continue to operate properly in the year 2000. This report discusses year 2000 issues involving health care information systems, biomedical devices, and facility devices (for example, elevators; heating, ventilation, and air conditioning systems; intrusion detection systems; and sprinkler systems). This report presents the results of the first phase of this project. The second phase will involve followup on the issues and recommendations raised in this report, as well as an expanded evaluation of testing and contingency plans.

Audit Results. The Assistant Secretary of Defense (Health Affairs) and the Military Departments have taken many positive actions to identify and correct year 2000 problems in the Military Health Systems automated information systems, biomedical devices, and facility devices. However, further Assistant Secretary of Defense (Health Affairs) action is needed in reporting slippage in completion dates, preparing interface agreements and contingency plans, combining year 2000 fixes with functionality upgrades, and incorporating year 2000 requirements into contracts for automated information systems. In addition, the Assistant Secretary and the Military Departments need to perform year 2000 testing of biomedical devices, where possible, and stress that military treatment facility commanding officers coordinate with installation commanders to ensure that the appropriate priority is given to year 2000 fixes for critical health care facility devices. Such actions are critical to ensure that full DoD health care and medical readiness capabilities are realized in the year 2000 and beyond. The audit results are detailed in Part I.

Summary of Recommendations. We recommend that the Assistant Secretary of Defense (Health Affairs) establish procedures to promptly report slippage in completion dates; prepare interface agreements and contingency plans in accordance with the DoD Year 2000 Management Plan; and make sure slippage does not occur when year 2000 fixes are combined with system upgrades. We also recommend that the Assistant Secretary appropriately test to mitigate the risks for products obtained recently on contracts and delivery orders that did not include required year 2000 clauses. We also recommend that the Assistant Secretary perform tests, where possible, of biomedical devices for year 2000 compliance, and issue direction to the Military Department Surgeons General that require military treatment facility commanders to coordinate with installation commanders to ensure the appropriate priority is given to medical facility devices in the year 2000 compliance process.

Management Comments. The Principal Deputy Assistant Secretary of Defense (Health Affairs) concurred with the finding and recommendations. The Principal Deputy stated that his staff worked closely with the audit staff to initiate corrective actions as issues were identified. Procedures were established to ensure project managers report accurate schedule and management information by adopting an enterprise-wide project management and reporting system. Before the end of September, 99 percent of interface agreements were in place and a draft Military Health System contingency and continuity of operations planning guide was published. Copies of the guide have been provided to the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) and other agencies for their use. Actions were taken to accelerate automated information systems timelines to meet DoD mandated completion dates. Also, all components of automated information systems will be evaluated for year 2000 compliance. Delivery orders for the Defense Medical Information System/Systems Integration, Design, Development, Operations and Maintenance Services I contract will contain the required year 2000 language. The Office of the Assistant Secretary of Defense (Health Affairs) is working with the American Hospital Association and biomedical equipment manufacturers to outline criteria and methods to evaluate manufacturers' procedures used to ensure compliance. Special emphasis has been placed on ensuring that medical treatment facility commanders closely coordinate year 2000 compliance for medical facility devices with installation commanders. See Part I for a summary of management comments and Part III for the complete text of the comments.

Audit Response. The Principal Deputy's comments were fully responsive and no additional comments are required. Throughout the audit we worked closely with the staff in the Office of the Assistant Secretary of Defense (Health Affairs), which aggressively searched to identify year 2000 problems and solutions, and initiated many actions to correct the issues. We will evaluate the actions taken during the second phase of this audit. We commend the staff's proactive and aggressive approach to resolving year 2000 issues.

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Part I - Audit Results

Audit Background

The year 2000 (Y2K) problem is the term most often used to describe the potential failure of information technology systems to process or perform date-related functions before, on, or after the turn of the century. The Y2K problem is rooted in the way automated information systems record and compute dates. For the past several decades, systems have typically used two digits to represent the year, such as "98" representing 1998, to conserve electronic data storage and reduce operating costs. With the two-digit format, however, Y2K is indistinguishable from 1900. As a result of the ambiguity, computers and associated systems and application programs that use dates to calculate, compare, or sort could generate incorrect results when working with years after 1999. Calculation of dates is further complicated because the year 2000 is a leap year, the first century leap year since 1600. The computer systems and applications must recognize February 29, 2000, as a valid date.

Because of the potential failure of computers to run or function throughout the Government, the President issued an Executive Order 13073, "Year 2000 Conversion," February 4, 1998, making it policy that Federal agencies ensure that no critical Federal program experiences disruption because of the Y2K problem. The order requires that the head of each agency ensure that efforts to address the Y2K problem receive the highest priority attention in the agency. The order also listed health care as one of five critical areas in which the Federal Government should cooperate with the private sector.

A Secretary of Defense memorandum, "Year 2000 (Y2K) Compliance," August 7, 1998, stated that DoD is making insufficient progress in its effort to solve its Y2K computer problem. The memorandum directed more accountability and reporting requirements at the highest levels within DoD. The memorandum further stated that if Y2K progress is still lagging in November and December 1998, all further modifications to software, except those needed for Y2K remediation, will be prohibited after January 1, 1999.

A Deputy Secretary of Defense memorandum, "Year 2000 (Y2K) Verification of National Security Capabilities," August 24, 1998, stated that each Principal Staff Assistant of the Office of the Secretary of Defense must verify that all functions under his or her purview will continue unaffected by Y2K issues. The memorandum further required that the designated Principal Staff Assistant provide plans for Y2K-related end-to-end testing of each process within five functional areas, including health care, to the Deputy Secretary of Defense by November 1, 1998.

DoD Y2K Management Strategy. In his role as the DoD Chief Information Officer, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence (ASD [C3I]) issued version 1.0 of the "DoD Year 2000 Management Plan" in April 1997. Version 1.0 requires DoD Components to implement a five-phase (awareness, assessment, renovation, validation, and implementation) Y2K management process. Subsequently,

ASD(C3I) issued version 2.0 of the "DoD Year 2000 Management Plan, For Signature Draft" (DoD Management Plan), in June 1998, which accelerates the target completion dates for the renovation, validation, and implementation phases. The new target completion date for implementation of mission-critical systems is December 31, 1998. Both versions provide the overall DoD strategy and guidance for inventorying, prioritizing, fixing, and retiring systems and for monitoring progress. They also state that the DoD Chief Information Officer has overall responsibility for overseeing the DoD solution to the Y2K problem.

In a January 20, 1998, memorandum for the heads of executive departments and agencies, the Office of Management and Budget (OMB) established a new target date of March 1999 for implementing corrective actions to all systems. The new target completion dates for the renovation and validation phases are September 1998 and January 1999, respectively.

Year 2000 Responsibilities for Health Care Systems. Y2K issues in DoD health care encompass automated information systems (AIS), biomedical devices, and facility devices. The Assistant Secretary of Defense (Health Affairs) (ASD[HA]) is responsible for providing oversight of AIS Y2K compliance. Individual AIS project managers, many from the Military Departments, have the specific responsibility for correcting noncompliant Y2K AIS. ASD(HA) prepares and provides the quarterly Y2K status reports to ASD(C3I), for OMB, on AIS and biomedical devices. The Military Departments are responsible for correcting potential Y2K problems in biomedical devices and facility devices, and reporting the Y2K status of facility devices to ASD(C3I). The following sections provide details on AIS and biomedical and facility devices.

AIS. ASD(HA) maintains an internal database of all AIS being tracked for Y2K compliance purposes. The database is used to prepare and provide quarterly reports to ASD(C3I) and internally monitor AIS Y2K status. A comparison of information in the internal database showed that significant slippage has occurred in the dates mission-critical AIS will complete the final three phases of the DoD Management Plan. Details are shown in Table 1.

Table 1. Slippage of Dates Mission-Critical AIS Will Complete Renovation, Validation, and Implementation Phases

Mission-Critical AIS	Number in Database as of March 18, 1998	Number in Database as of July 28, 1998
Total mission-critical AIS	77	65
Number of AIS not completing renovation phase by June 30, 1998	13	20
Number of AIS not completing validation phase by October 31, 1998	7	9
Number of AIS not completing implementation phase by December 31, 1998	10	15

Table 1 shows a reduction in the number of mission-critical AIS in the database from March 18 to July 28, 1998. In addition, a recent action to categorize mission-critical AIS (discussed in finding) should result in a further reduction in the number of mission-critical AIS reported to ASD(C3I). The quarterly reports to ASD(C3I) for OMB show the number of AIS in each phase, but do not show the projected dates for completing each phase. As a result, ASD(C3I) may not be aware of the projected AIS slippage until it has occurred. The report to ASD(C3I) for the quarter ending June 30, 1998, showed 64 mission-critical AIS. The difference between the 64 mission-critical AIS reported to ASD(C3I) and the 65 shown in the above schedule occurred because the information was taken from the database on different dates. The report showed 20 (31.1 percent) of the 64 AIS were Y2K compliant and all had completed the awareness phase. The report also showed 1 in the assessment phase, 13 in the renovation phase, 9 in the validation phase, 12 in the implementation phase, and 9 to be decommissioned by December 1999. ASD(HA) estimated that it will cost about $66.3 million to successfully complete its Y2K program for mission- and nonmission-critical AIS.

Biomedical Devices. The DoD Management Plan reduced the five-phase management strategy to three phases (inventory, assessment, and implementation) for biomedical devices, facility devices, and other embedded chip applications. Potential Y2K sensitivity is a concern related to the embedded chips in any device that includes a microchip or microprocessor. According to a tri-service process action team responsible for the biomedical device area, the inventory phase for biomedical devices was completed by March 31, 1998, as required. The process action team originally estimated that the assessment phase would be completed by November 30, 1998, as required. However, during a July 22, 1998, health functional area interface assessment workshop, chaired by the Special Assistant to the ASD(C3I) for Y2K, the team acknowledged that the OMB March 1999 time frame for completing the implementation phase for noncompliant biomedical

devices will not be met. Because of the need to use equipment scheduled for replacement or repair after the OMB March 1999 deadline, MTFs are expected to request waivers to the deadline.

Facility Devices. Facility devices are the basic support and operational equipment (for example, elevators; heating, ventilation, and air conditioning systems; intrusion detection systems; and sprinkler systems) used in the hospital and clinic building infrastructure. The Y2K status of DoD medical facility devices is determined and reported in conjunction with the host installation through the Military Department chain of command. As a result, it is difficult for DoD management to determine the Y2K status of a specific medical facility. Version 1.0 of the DoD Year 2000 Management Plan did not adequately address facility issues, such as embedded chips. The first DoD Facility Interface Assessment Workshop was not held until March 11, 1998. As a result, inventories of medical facility devices were not completed by March 31, 1998, as required. During a July 22, 1998, briefing to ASD(C3I), the Air Force stated that the inventory of medical facility devices was complete, the Army stated that the inventory of facility devices was about 90 percent complete, and the Navy did not have sufficient information to estimate the percentage of inventories that had been completed. The details of the Military Departments strategy for expediting completion of the inventory, assessment, and implementation phases for facility devices are discussed in the finding.

Audit Objectives

The audit objective was to determine whether planning and management are adequate to ensure that mission-critical health systems will continue to operate properly in the year 2000. Specifically, the audit examined DoD management policy and guidance relevant to health care AIS, biomedical devices, and facility devices. See Appendix A for a discussion of the audit scope and methodology and for a summary of prior coverage.

Status of the DoD Health Care Year 2000 Program

The ASD(HA) and the Military Departments have taken many positive actions to identify and correct Y2K problems in the Military Health Systems AIS, biomedical devices, and facility devices. However, in the AIS area, additional action is needed to:

- promptly report slippage of renovation, validation, and implementation completion dates;

- properly prepare interface agreements;

- properly prepare contingency plans;

- avoid lengthy delays in Y2K fixes due to combining Y2K fixes with functionality upgrades; and

- incorporate Y2K requirements into contracts.

In addition, ASD(HA) and the Military Departments need to perform Y2K testing of biomedical devices, where possible, and stress the need for military treatment facility (MTF) commanding officers to coordinate with installation commanders to ensure appropriate priority is given to Y2K fixes for critical health care facility devices. Such actions are critical to ensure that full DoD health care and medical readiness capabilities are realized in Y2K and beyond.

Actions Taken to Address the Year 2000 Problems

Categorization of Mission Critical AIS. The ASD(HA) recognized the importance of AIS Y2K compliance early and established a Y2K project office May 1, 1997. In July 1998, the OASD(HA) began categorizing all AIS that were previously considered mission critical into three categories (mission critical, mission essential, and mission support). The need for the refined categorization demonstrates the difficulty ASD(HA) has experienced in isolating those systems that are critical to mission performance. The intent of the categorization is to establish priorities for the 65 AIS previously identified as mission critical in order to focus limited funding and personnel resources on the most critical systems. We commend this approach.

The AIS that were previously reported as mission critical include direct patient care systems, such as the Composite Health Care System and the Defense Blood Standard System, as well as nonpatient care systems like the Medical Expense Performance and Reporting System. Although those systems were not of equal importance in delivering health care and maintaining readiness, they were considered equal when sharing the resources available for fixing Y2K problems.

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Categorization is a significant positive step toward prioritizing AIS to ensure Y2K compliance of the systems that directly support patient care and readiness. ASD(HA) completed the categorization process August 31, 1998, and 13 AIS are now considered mission critical.

Biomedical Devices. Because of the similarity of the biomedical devices at each MTF and to facilitate the process of determining Y2K compliance for biomedical devices, the Military Departments established a tri-service process action team. The establishment of the tri-service process action team has greatly facilitated the process for determining the Y2K status of the biomedical devices. The process action team also exchanges information on biomedical devices with the Departments of Health and Human Services and Veterans Affairs. The Department of Health and Human Services maintains a webpage at http://www.fda.gov/cdrh/yr2000/year2000.html. Y2K compliance information is subsequently provided to individual MTFs for appropriate action, such as arranging for repair or replacement of biomedical devices that are not Y2K compliant. As of August 18, 1998, the tri-service process action team had received responses from 95 percent of the manufacturers on the Y2K compliance of medical products determined to be potential Y2K problems.

Facility Devices. In June 1998, DoD and the Department of Veterans Affairs established a joint medical facility devices group to coordinate the Y2K compliance of facility devices. The group also shares Y2K information on facility devices with the General Services Administration and the information is available at webpage (http://y2k.lmi.org/gsa/y2kproducts/search.htm). The establishment of the joint medical facility devices group to share and coordinate Y2K information, was a significant positive action toward determining the Y2K compliance of facility devices.

Prompt Reporting of Slippage for Completing AIS Renovation, Validation, and Implementation

AIS Program Managers were aware of the slippage in completion dates, but the slippage was not promptly reported to the ASD(HA) Y2K Project Office.

Reporting Slippage in Completion Dates. As discussed previously, significant slippage has occurred in the dates for completing the AIS renovation, validation, and implementation phases. ASD(HA) maintains an internal database on AIS completion dates. The database is used to monitor AIS Y2K status and to prepare and provide quarterly AIS Y2K status reports to ASD(C3I) and OMB. Y2K Project Office personnel believed many of the AIS completion dates were unrealistic. However, the office relies on the dates provided by the AIS project managers. AIS project managers did not always notify the Y2K Project Office when estimated completion dates for the Y2K phases changed. We selected five mission-critical AIS and compared the completion dates in the OASD(HA) Y2K database to the completion dates provided by AIS project managers. Table 2 shows the slippage that occurred that was not reported to the ASD(HA) Y2K Project Office.

Table 2. AIS Completion Dates
(as of August 18, 1998)

AIS	Renovation	Validation	Implementation
Corporate Executive Information System			
Y2K Project Office	Aug. 30, 1998	Sept. 30, 1998	Oct. 30, 1998
AIS Program Office	Oct. 30, 1998	Dec. 15, 1998	Jan. 31, 1999
Pathology Information Management System			
Y2K Project Office	Jul. 31, 1998	Jul. 31, 1998	Aug. 1, 1998
AIS Program Office	Jul. 31, 1998	Aug. 31, 1998	Sept. 1, 1998
Shipboard Non-Tactical ADP Program-Shipboard Automated Medical System			
Y2K Project Office	Aug. 15, 1998	Sept. 1, 1998	Dec. 31, 1998
AIS Program Office	Aug. 15, 1998	Sept. 30, 1998	Dec. 31, 1998
Uniform Chart of Account Personnel System			
Y2K Project Office	Sept. 30, 1998	Sept. 30, 1998	Nov. 30, 1998
AIS Program Office	Sept. 30, 1998	Nov. 25, 1998	Feb. 28, 1999
Workload Management System For Nursing			
Y2K Project Office	Sept. 30, 1998	Sept. 30, 1998	Nov. 30, 1998
AIS Program Office	Sept. 30, 1998	Oct. 30, 1998	Feb. 28, 1999

Importance of Accurate Y2K Status Reporting. Communication between the AIS project managers and the ASD(HA) Y2K Project Office is essential for the accurate reporting of realistic completion dates to DoD management. When the projected completion dates slip but are not promptly reported up the chain of command, senior management in DoD and OMB may not be aware that systems are slipping until after the required completion dates are missed. Without such information, management may not be focusing attention and limited Y2K resources on the mission critical AISs that are the most behind and critical to patient care.

Preparing AIS Interface Agreements

ASD(HA) had not completed all interface agreements and the completed interface agreements were not always prepared in accordance with the DoD Management Plan.

Definition of Interface. The DoD Management Plan defines an interface as a boundary across which two systems communicate. An interface might be a hardware connector used to link to other devices, or it might be a convention used to allow communication between two software systems. Interfaces may connect AIS internal to the Military Health System, internal to DoD, or external to DoD.

Preparing Interface Agreements. As of July 24,1998, agreements were not completed for 51 (25 percent) of the 204 interfaces identified for the 65 mission-critical AIS. The DoD Management Plan required that the renovation phase be completed by June 30, 1998, and all interface agreements be completed by the end of the renovation phase. The DoD Management Plan also provides a sample interface agreement and the minimum information that the agreements must contain. A review of 18 completed AIS interface agreements disclosed that only 2 agreements met the minimum requirements. The remaining interface agreements were deficient in one or more of the following areas.

- 12 did not include a data set or data file name and description of the interface;

- 11 did not include an interface strategy for both sending and receiving systems (for example, field expansion, procedural code, sliding window, or combination of these strategies); and

- 2 did not show milestone dates for completing analysis, programming, testing, joint testing, and implementation to ensure the completion of all tasks by December 31, 1998.

The ASD(HA) Y2K Project Officer agreed with the deficiencies and initiated an interface agreement checklist to try to prevent the deficiencies from continuing to occur.

Importance of Interface Agreements. Accurate data exchanges are critical to the successful operation of many AIS. AIS interface identification, along with properly prepared interface agreements, must be in place to ensure accurate data exchanges. Those agreements also facilitate the preparation of the plans for Y2K testing required in the Deputy Secretary of Defense August 24, 1998, memorandum. In view of the deficiencies in this area, ASD(HA) should closely monitor the preparation of interface agreements.

Preparing AIS Contingency Plans

Contingency plans were not always developed for mission-critical AIS that were reported as being 2 or more months behind DoD Y2K time frames. In addition, completed contingency plans were not always developed in accordance with DoD and General Accounting Office contingency planning guidelines.

Definition of Contingency Plan. The General Accounting Office defines contingency plan as a "plan for responding to the loss or degradation of essential services due to a problem in an automated system. In general, a contingency plan describes the steps to take, including the activation of manual or contract processes, to ensure the continuity of core business processes in the event of a Y2K induced system failure." The DoD Management Plan states that system

level contingency planning is the primary management tool to prepare for unanticipated disruptions. The DoD Management Plan recognizes that the level of detail in a contingency plan will depend on system complexity and its priority.

OASD(HA) Contingency Plans. The DoD Management Plan requires the development of a contingency plan for any mission-critical AIS that is 2 or more months behind the Y2K milestones. The July 1998 quarterly report to ASD(C3I) showed that 18 AIS were 2 or more months behind the DoD required dates for completing one or more of the final 3 phases. However, contingency plans had been developed for only 7 of the 18 mission-critical AIS. In addition, a review of six completed contingency plans disclosed that only two were prepared in accordance with DoD and GAO contingency planning guidelines. Based on our review of DoD and GAO guidance we concluded that AIS contingency plans should, at a minimum:

- identify hazards or risks that could cause system failure and identify the effects of the failure,

- identify ways to preserve and protect system data,

- identify emergency alternative procedures to perform during contingencies,

- define triggers to activate contingency plans, and

- establish "zero day" strategy and procedures.

The results of our review of six contingency plans to determine compliance with the above criteria are shown in Table 3.

Table 3. Compliance with Contingency Plan Criteria

AIS	Identify Risks	Preserve Data	Alternative Procedures	Triggers	Zero Day Strategy
Automated Blood Product Labeling System	Yes	Yes	Yes	Yes	Yes
Bureau of Medicine Information System	No	Yes	Yes	No	No
Composite Health Care System	No	Yes	Yes	No	No
Defense Blood Standard System	Yes	No	No	No	No
Medical Expense and Performance Reporting System-Expense Assignment System III	Yes	No	No	No	No
Transportation Command Regulating and Command and Control Evacuation System	Yes	Yes	Yes	Yes	Yes

Importance of Contingency Planning. The DoD Management Plan states that even systems that have been renovated and tested could fail, and the failure of one system could disrupt many others. For example, the Composite Health Care System interfaces with at least 19 other AIS. The DoD Management Plan further states that system level contingency planning is the primary management tool to prepare for unanticipated disruptions. Therefore, contingency planning is a critical responsibility of DoD Components

Combining Y2K Fixes With AIS Upgrades

Major mission-critical AIS were not meeting the required DoD and OMB completion dates for the renovation, validation, and implementation phases, in part, because Y2K fixes were being combined with system functionality upgrades.

Strategy for Y2K Fixes. The DoD Year 2000 Management Plan, version 1.0, stated that existing resources would be used for Y2K compliance efforts. As a result, AIS project managers adopted a cost-effective strategy of combining Y2K compliance efforts with other planned system upgrades. We reviewed portions of contract tasking documents or statements of work for upgrading four AIS

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(Corporate Executive Information System, Composite Health Care System, Military Expense and Performance Reporting System-Expense Assignment System III, and Nutrition Management Information System). Each of the AIS included Y2K compliance efforts as a task or subtask in conjunction with other planned product improvements. However, the negotiated timelines for system upgrades did not ensure that the various phases of the Y2K effort would be completed by the dates required in the DoD Management Plan. For example, the program managers for the Corporate Executive Information System and the Composite Health Care System estimate completion of the Y2K implementation phase to be January 31, 1999, and March 31, 1999, respectively. These dates are beyond the DoD Management Plan requirement of December 31, 1998. According to the ASD(HA) Y2K project manager, the Composite Health Care System is considered to be the highest priority AIS.

Importance of Separating Y2K Compliance for System Upgrades. Although the strategy of including Y2K efforts with other tasks appears to be cost-effective, we believe ASD(HA) should monitor this situation closely, particularly for the 13 systems recently categorized as mission critical. The ability to deliver care could be significantly degraded, especially where contingency plans do not exist. Therefore, if further slippage occurs, ASD(HA) should consider modifying contracts to separate the Y2K fix from other system upgrades and increasing the number of software installation teams.

Incorporating Y2K Requirements in AIS Contracts

ASD(HA) contracting officers did not require that AIS hardware and software purchased under four contracts be Y2K compliant. Delivery orders for two of the contracts contained language that addressed the Y2K issue; however, the language did not provide the assurances required by ASD(C3I) guidance.

Federal Acquisition Regulation Definition of Y2K Compliant. The Federal Acquisition Regulation, part 39.002 states:

> Year 2000 compliant, as used in this part, means, with respect to information technology, that the information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time data with it.

ASD(C3I) Guidance. ASD(C3I) memorandum "Acquisition of Year 2000(Y2K) Compliant Information Technology (IT) and Bringing Existing IT into Compliance," December 18, 1997, provides guidance on AIS procurements. The memorandum states that orders for information technology shall not be placed against a contract or other acquisition instrument unless that contract or instrument requires Y2K compliance or the order itself requires Y2K compliance.

AIS Purchases. Details of the AIS hardware and software purchases that were made under the four contracts are provided in the following paragraphs.

Contracts One and Two. ASD(HA) established a Support Hardware and Automation Related Products-Generic (SHARP-G) Program to purchase AIS hardware and software. The SHARP-G Program was for 1 year (August 8, 1997, through August 7, 1998) and offered procurement opportunities under three contracts for commercial off-the-shelf products. None of the contracts under the SHARP-G program required products to be Y2K compliant. A total of seven delivery orders were issued from December 18, 1997, through the expiration of the SHARP-G program. The delivery orders were placed against two of the three contracts and the delivery orders did not require products to be Y2K compliant (see Table 4).

Table 4. Delivery Orders That Did Not Include Required ASD(C3I) Y2K Language

Contract No.	Delivery Order	Date of Order	Amount
DASW01-97-D-0097	0001	Aug. 3, 1998	$ 101,924
DASW01-97-D-0095	0001	Apr. 21, 1998	81,552
DASW01-97-D-0095	0002	Apr. 21, 1998	88,348
DASW01-97-D-0095	0003	Jun. 10, 1998	10,239
DASW01-97-D-0095	0004	Jun. 10, 1998	84,859
DASW01-97-D-0095	0005	Aug. 4, 1998	50,527
DASW01-97-D-0095	0006	Aug. 4, 1998	3,008,824
Total			**$3,426,273**

Contracts Three and Four. On March 17, 1995, ASD(HA) awarded four contracts for AIS services, hardware, and software under the Defense Medical Information System/Systems Integration, Design, Development, Operations and Maintenance Services (D/SIDDOMS) Program. The D/SIDDOMS Program expires March 31, 1999. We reviewed two of the four contracts (DAW01-95-D-0024 and DAW01-95-D-0025) that were used significantly. Because neither the D/SIDDOMS solicitation nor the two contracts contained Y2K language, ASD(HA) attempted to put the Y2K language in the delivery orders under the contracts. We reviewed 10 delivery orders under contract DAW01-95-D-0024 and 9 delivery orders under contract DAW01-95-D-0025, dated from December 18, 1997, through June 10, 1998, for Y2K compliance. The 19 delivery orders totaled over $28 million and included support services, software, and hardware. However, we could not determine the exact amount expended for services, software, or hardware. Of the 19 delivery orders, 3 included language that satisfied ASD(C3I) Y2K contract requirements. The other 16 included Y2K language, but did not satisfy ASD(C3I) Y2K contract requirements. Instead, the delivery orders specifically stated that the prime

contractor did not warranty the Y2K compliance for any products provided by subcontractors to DoD through the prime contractor. The delivery orders stated, with respect to the requirements for year 2000:

> . . . purchased hardware and /or software, the contractor does not offer any warranties. The contractor will pass the vendors' and/or manufacturers' standard warranties/certifications to the Government. With respect to those vendors or manufacturers of any additional purchased products, which do not provide a warranty or certification of Year 2000 compliance, the contractor will identify these to the Government for its determination/decision as to whether these products should be acquired for the project.

> Further, as to any third-party products or services provided by subcontractors or vendors under this Delivery Order, the contractor shall, to the extent normally permitted by the manufacturer, pass through and assign to the Government all of manufacturer's standard warranties, if any, including warranties regarding Year 2000 compliance, but the contractor shall not have any further liability or responsibility with respect thereto. The contractor provides no further warranty, express or implied, regarding the Year 2000 performance.

Federal Acquisition Regulation, subpart 9.601 states that a contractor team arrangement develops when a prime contractor agrees with one or more other companies to have them act as its subcontractors under a specified Government contract or acquisition program. Federal Acquisition Regulation, subpart 9.604 states that a contractor team arrangement does not limit the Government's right to hold the prime contractor responsible for the actions of the subcontractor, no matter what the terms are of the team arrangement.

Importance of ASD(C3I) Y2K Contract Requirements. Without including ASD(C3I)required Y2K contract language, ASD(HA) had no assurance that purchased AIS products were Y2K-compliant; and there was no contractor obligation to fix the items that were found to be noncompliant. Because hardware and software from the contracts reviewed may be integrated into mission-critical applications, the full risk of having non-Y2K-compliant AIS hardware and software is unknown. Therefore, ASD(HA) should determine where the AIS products purchased under the 7 SHARP-G and 16 D/SIDDOMS delivery orders are being used and perform the appropriate Y2K testing to mitigate risks. ASD(HA) should also require that all delivery orders for AIS under the D/SIDDOMS Program, which expires March 31, 1999, include ASD(C3I) Y2K requirements.

Y2K Testing and Contingency Plans for Biomedical Devices

ASD(HA) was not planning tests to determine the Y2K compliance of biomedical devices. In addition, the development of contingency plans for biomedical devices had not begun.

Strategy for Determining Compliance. ASD(HA) was relying on the manufacturers statements of Y2K compliance for biomedical devices. The cover story in *Modern Healthcare* magazine, August 10, 1998, discussed the perils of the failure of biomedical devices and the risks of relying on manufacturers' compliance statements. The article warned that equipment manufacturers frequently change their position on the Y2K compliance status of their products.

The DoD Management Plan recognizes that devices considered Y2K compliant might fail; therefore, it requires that contingency plans be developed as a backup. We realize that contingency plans for biomedical devices are not required until December 31, 1998. However, we saw no evidence of an effort to develop contingency plans for biomedical devices.

Importance of Testing Biomedical Devices. As discussed earlier, the tri-service process action team for biomedical devices has received responses from approximately 95 percent of the biomedical devices manufacturers. Because this phase of the compliance process is nearing completion, ASD(HA) should perform sample tests, where possible, to determine the validity of the manufacturer's responses indicating Y2K compliance. Testing plans and results should be shared with other Government agencies to the maximum possible extent.

Emphasis on Medical Facility Compliance

The Military Departments did not complete the medical facility device inventories by March 31, 1998, and may not complete the implementation phase by December 31, 1998, as required by the DoD Management Plan.

Facility Devices Inventory and Assessment. Recognizing they were behind, the Military Departments have contracted portions of the inventory and assessment of medical facility devices. Details concerning each Military Department in-house and contractual efforts in this area are provided below.

Army. The Army initially performed the facility devices inventory and assessment with in-house personnel. However, the Army Medical Command awarded two contracts in July 1998 to ensure the accuracy of the facility devices inventory and assessments. One contract, totaling about $15,000, was for training MTF personnel on facility Y2K issues. The other contract was for validating the accuracy of the inventories and assessments performed at 10 MTFs with a total cost of $160,000. On August 14, 1998, the Army Medical Command reported that the facility devices inventory was completed at all 38 Army MTFs, and assessments were completed at 22 of the MTFs, while the other 16 MTFs were still assessing the facility devices. The assessments at the 22 MTFs revealed that 36 critical facility devices are noncompliant. The estimated cost to repair 12 of the facility devices was $1.4 million and the remaining 24 critical systems either had no cost to repair, or the MTF was still determining the repair cost.

Air Force. The Air Force performed the facility devices inventory with in-house personnel. According to the Air Force Medical Logistics Office, as of August 21, 1998, 83 medical sites had completed their facility device inventories.

The sites included the MTFs and the medical research and laboratory facilities. The Air Force method for performing assessments varies by site. Some medical sites are performing assessments with in-house personnel and some are using contractors. Additionally, 53 percent of the Air Force medical sites had reported Y2K assessment information and 30 percent of those sites had completed assessments. As of August 21, 1998, the estimated cost to repair or replace the noncompliant facility devices identified was $1.3 million.

Navy. The Navy was the last of the Military Departments to begin inventorying and assessing facility devices for Y2K compliance. The Navy used in-house personnel to perform facility devices inventories at the 40 MTFs under the Bureau of Medicine and Surgery Claimancy. In June 1998, the Bureau of Medicine and Surgery entered into a contract, at an approximate cost of $385,000, to assess the facility devices inventoried. As of August 6, 1998, all the MTFs had reported the inventories to the contractor, and the contractor was assessing the facility devices.

Importance of Determining Y2K Compliance of Facility Devices. To ensure uninterrupted health care and readiness support, MTFs need to determine the Y2K compliance of facility devices. Completion of the facility devices inventory and assessment phases is required to determine the cost of repairing or replacing non-compliant devices. In addition, like biomedical devices, some facility devices use embedded microchips and MTFs are dependent on manufacturers' responses for determining Y2K compliance. Slow manufacturer responses could further delay the assessment of facility devices. Even with the establishment of the joint medical facility devices group and with contract support, the facility devices area is unlikely to complete the implementation phase by December 31, 1998, as required by the DoD Management Plan. Therefore, ASD(HA) should closely monitor Y2K compliance of facility devices and issue direction to the Military Department Surgeons General requiring MTF commanders to coordinate with installation commanders to ensure that critical medical facility devices are given the appropriate priority in the Y2K compliance process.

Management Actions During the Audit

Throughout the audit we worked closely with the ASD(HA) staff responsible for Y2K compliance. As we identified Y2K problems, we notified ASD(HA) staff members and they initiated actions to correct the problems. Part III contains a memorandum from the Principal Deputy ASD(HA) that highlights actions initiated by his staff during the audit. Those actions included:

- updating project plans and using a project management tool that provides all levels of management with current schedule performance data;

- developing a quality review process and checklist to ensure all required interface agreements are prepared;

- developing a contingency and continuity of operations planning guide;

- reviewing timelines for all AIS, including those with combined Y2K fixes and functionality upgrades, to ensure compliance with DoD mandated completion dates; and

- evaluating components of all AIS for Y2K compliance, including systems without a Y2K compliance contract
clause.

We commend the quick response to the issues identified and plan to evaluate the effectiveness of such actions during the next phase of the audit.

Recommendations and Management Comments

We recommend that the Assistant Secretary of Defense (Health Affairs):

1. Establish procedures requiring automated information system project managers to promptly report slippages in automated information system completion dates to the Year 2000 Project Office.

Management Comments. The Principal Deputy ASD(HA) concurred, stating that procedures were established to ensure AIS project managers report accurate schedule information. The procedures include updating and entering Y2K project plans into an enterprise-wide project management tool (Primavera P3). Actions were taken to provide managers at all levels access to the then current schedule performance data. The Y2K Project Office uses the data to prepare all required reports, ensuring that reported data are current and accurate.

2. Prepare interface agreements for automated information systems in accordance with the DoD Year 2000 Management Plan.

Management Comments. The Principal Deputy ASD(HA) concurred, stating that as of September 23, 1998, 99 percent of required interface agreements had been completed. In addition, a quality review process and checklist was initiated and incorporated into the compliance assurance process. All agreements were reviewed and required corrective actions were provided to the AIS program managers.

3. Prepare contingency plans for all automated information systems that are 2 or more months behind the required completion dates, in accordance with the DoD Year 2000 Management Plan, and ensure that the contingency plans comply with DoD and the General Accounting Office contingency planning guidelines.

Management Comments. The Principal Deputy ASD(HA) concurred, stating that a draft version of a contingency planning and continuity of operations planning guide had been prepared and distributed. Because a DoD guide for contingency plans has not been developed, OASD(HA) will provide copies of the draft guide to the OASD(C3I) and other agencies for their use. The OASD(HA) Information Management Program Review Board directed that contingency plans

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for mission critical AIS be completed by October 1, 1998. In addition, an independent validation of contingency plans and continuity of operations plans was incorporated into the compliance assurance process.

4. Monitor systems in which year 2000 fixes and automated information system functionality upgrades have been combined, and take the actions necessary to ensure that slippage does not occur in completing year 2000 compliance in mission-critical systems.

Management Comments. The Principal Deputy ASD(HA) concurred. Actions were initiated to accelerate timelines to meet DoD mandated completion dates for the Composite Health Care System, and reviews were initiated to ensure that all AIS schedules will be consistent with DoD timelines.

5. Determine where the automated information system products purchased under the Support Hardware and Automation Related Products-Generic Program and Defense Medical Information System/Systems Integration, Design, Development, Operations and Maintenance Services Program (contracts DAW01-95-D-0024 and DAW01-95-D-0025) are being used with mission critical systems and do the appropriate year 2000 testing to mitigate risks.

Management Comments. The Principal Deputy ASD(HA) concurred. All components (hardware, software, and operating system software) of Military Health System AIS were being validated for Y2K compliance. All components purchased under contracts, with or without Y2K clauses, will be tested as part of the AIS compliance assurance process.

6. Include the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) year 2000 requirements in all delivery orders for automated information systems under the Defense Medical Information System/Systems Integration, Design, Development, Operations and Maintenance Services program.

Management Comments. The Principal Deputy ASD(HA) concurred. The Principal Deputy stated that although the D/SIDDOMS I contract was awarded before the requirement of Y2K compliance contract language, it will be transitioned to the recently awarded D/SIDDOMS II contract by March 1999. The D/SIDDOMS II contract meets the requirement for Y2K specific language. Until the transition is complete, all new delivery orders awarded under D/SIDDOMS I will include appropriate Y2K language.

7. Perform sample tests for year 2000 compliance, where possible, of biomedical devices deemed year 2000 compliant by the manufacturer.

Management Comments. The Principal Deputy ASD(HA) concurred. OASD(HA) is working in conjunction with the American Hospital Association and biomedical equipment manufacturers to outline criteria and methods to

evaluate the procedures manufacturers used to ensure compliance. A consensus within the health community regarding biomedical equipment testing is being resolved. OASD(HA) will work with the biomedical equipment manufacturers to establish procedures for validating Y2K compliance of critical biomedical equipment.

8. Monitor year 2000 compliance of facility devices and issue direction to the Military Department Surgeons General that require military treatment facility commanders to coordinate with installation commanders to ensure that critical medical facility devices are given the appropriate priority in the year 2000 compliance process.

Management Comments. The Principal Deputy ASD(HA) concurred, stating that the Military Services Deputy Surgeons General have prepared and distributed Y2K medical facility guidance. The guidance includes a requirement to coordinate medical facility issues and concerns with local installation commanders and facilities engineering organizations to emphasize the priority of resolving medical facility Y2K problems.

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Part II - Additional Information

Appendix A. Audit Process

This is one in a series of reports being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the Y2K computing challenge. For a listing of audit projects addressing this issue, see the Y2K webpage on IGnet at http://www.ignet.gov.

Scope

Work Performed. We reviewed the progress that the DoD health care community has made in resolving Y2K computing issues with AIS, biomedical devices, and facility devices. We reviewed AIS contracts and delivery orders dated from December 18, 1997, through August 31, 1998. We also reviewed and evaluated the inventory and reporting procedures, contingency plans, and interface agreements, for AIS dated from March 31, 1992, through July 28, 1998. We interviewed management representatives for five business areas who are responsible for the mission-critical AIS in DoD health care.

We also reviewed and evaluated the inventory and assessment procedures for biomedical devices and medical facility devices. We interviewed management representatives on the tri-service process action team who are responsible for making biomedical devices Y2K compliant. We also interviewed medical facility · management from the Army Medical Command, the Navy Bureau of Medicine and Surgery, and the Air Force Medical Logistics Office who are overseeing the effort to make medial facility devices Y2K compliant.

We compared the DoD health care Y2K efforts to those prescribed in the June 1998 DoD Management Plan.

Limitation of Audit Scope. Our review did not include nonstandard computer systems or applications that are developed outside the purview of the Office of the ASD(HA), such as systems that may be developed locally by the Military Departments. We did not test Y2K compliance of AIS, biomedical devices, and facility devices. Our review was limited to the Y2K management process in those areas.

DoD-Wide Corporate Level Goals. In response to the Government Performance and Results Act, DoD has established 6 DoD-wide corporate-level performance objectives and 14 goals for meeting the objectives. This report pertains to achievement of the following objective and goal.

Objective: Prepare now for an uncertain future. **Goal:** Pursue a focused modernization effort that maintains U.S. qualitative superiority in key war fighting capabilities. **(DoD-3)**

DoD Functional Area Reform Goals. Most major DoD functional areas have also established performance improvement reform objectives and goals. This report pertains to achievement of the following functional area objectives and goals.

- **Information Technology Management Functional Area.**
  Objective: Become a mission partner. **Goal:** Serve mission information users as customers. **(ITM-1.2)**

- **Information Technology Management Functional Area.**
  Objective: Provide services that satisfy customer information needs. **Goal:** Modernize and integrate Defense information infrastructure. **(ITM-2.2)**

- **Information Technology Management Functional Area.**
  Objective: Provide services that satisfy customer information needs. **Goal:** Upgrade technology base. **(ITM-2.3)**

High-Risk Area. In its identification of risk areas, the General Accounting Office has specifically designated risk in resolution of the Y2K problem as high. This report provides coverage of that problem.

Methodology

Audit Type, Dates, and Standards. We performed this program audit from February through August 1998 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We determined that the internal AIS database maintained by the Y2K project office did not always reflect accurate completion dates for the DoD Management Plan phases. We did not use any other computer-processed data for this audit.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD and the Departments of Health and Human Services and Veterans Affairs. Further details are available on request.

Management Control Program. We did not review the management control program related to the overall audit objective because DoD recognized the Y2K issue as a material management control weakness area in the FY 1997 Annual Statement of Assurance.

Summary of Prior Coverage

The General Accounting Office and the Inspector General, DoD, have conducted multiple reviews related to Y2K issues. General Accounting Office reports can be accessed over the internet at http://www.gao.gov. Inspector General, DoD, reports can be accessed over the internet at http://www.dodig.osd.mil.

Appendix B. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
    Deputy Under Secretary of Defense (Industrial Affairs and Installations)
    Deputy Under Secretary of Defense (Logistics)
    Director, Defense Logistics Studies Information Exchange
    Director of Defense Procurement
Under Secretary of Defense (Comptroller)
    Deputy Chief Financial Officer
    Deputy Comptroller (Program/Budget)
Under Secretary of Defense (Personnel and Readiness)
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
    Deputy Assistant Secretary of Defense (Command, Control, Communications, and
        Intelligence, Surveillance, Reconnaissance, and Space Systems)
    Deputy Chief Information Officer and Deputy Assistant Secretary of Defense (Chief
        Information Officer Policy and Implementation)
        Principal Deputy - Y2K
Assistant Secretary of Defense (Health Affairs)
Assistant Secretary of Defense (Public Affairs)

Joint Staff

Director, Joint Staff

Department of the Army

Auditor General, Department of the Army
Inspector General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy
Inspector General, Department of the Navy
Superintendent, Naval Postgraduate School
Deputy Naval Inspector General for Marine Corps Matters

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force
Inspector General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
    Chief Information Officer, Defense Contract Audit Agency
Director, Defense Information Systems Agency
    Inspector General, Defense Information Systems Agency
    Chief Information Officer, Defense Information Systems Agency
Director, Defense Logistics Agency
Director, National Security Agency
    Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency
Inspector General, Atlantic Command
Inspector General, European Command
Inspector General, Pacific Command

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
    Office of Information and Regulatory Affairs
    National Security Division Special Projects Branch
General Accounting Office
    National Security and International Affairs Division
        Technical Information Center
    Health, Education, and Human Services
    Director, Defense Information and Financial Management Systems, Accounting and
        Information Management Division
Inspector General, Department of Health and Human Services
Inspector General, General Services Administration
Inspector General, Department of Veterans Affairs

Non-Defense Federal Organizations and Individuals (cont'd)

Chairman and ranking minority member of each of the following congressional
committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
Senate Special Committee on the Year 2000 Problem
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on Government Management, Information, and Technology,
    Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice,
    Committee on Government Reform and Oversight
House Committee on National Security

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Part III - Management Comments

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Principal Deputy Assistant Secretary of Defense (Health Affairs)Comments

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

03 DEC 1998

MEMORANDUM FOR DEPUTY INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Audit Report on Year 2000 Computing Issues Related to Health Care in DoD
(Project no. 2LF-5013)

Reference is made to the Director, Readiness and Logistics Support Directorate memorandum, dated 20 October 1998, subject as above. The DoD Inspector General Draft Audit Report documents the results of a Health Care Y2K audit conducted by the DoD IG. We appreciate your staff's cooperation and partnership in addressing the Y2K issues.

On 1 October 1998, we formally submitted a response to your Discussion Draft and have aggressively implemented the management actions indicated in Appendix B of the report, attachment 1. We continue to pursue those actions vigorously and invite your team to revisit them at any time. Attachment 2 includes additional responses to the draft report findings for inclusion in the final report.

Should you require additional information, my point of contact is Ms. Clarissa Reberkenny, Director, Technology Management, Integration and Standards. Ms. Reberkenny can be reached at (703) 681-8823 or by e-mail at Clarissa.Reberkenny@tma.osd.mil.

Gary A. Christopherson
Principal Deputy Assistant Secretary

Attachments
As stated

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, DC 20301-1200

OCT   1998

HEALTH AFFAIRS

MEMORANDUM FOR DEPUTY INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Management Actions Taken Concurrent to Inspector General Year 2000 Audit

The evolving nature of Year 2000 (Y2K) issue as well as the equally dynamic approaches used to address the issue foster an environment of joint problem definition and problem solving. The DoD Inspector General (IG) Discussion Draft documents the results of a Health Care Y2K audit conducted by the DoD IG. This audit was conducted in an atmosphere of partnership and cooperation. As issues surfaced during the audit, immediate actions were taken to implement policy and procedures to address those issues. Significant IG findings and the present Office of the Assistant Secretary of Defense (Health Affairs) (OASD(HA)) actions initiated during the audit are attached.

I recognize the professional and cooperative approach taken by members of the IG staff and would like to express my appreciation for their efforts in addressing the complex and pressing problem.

Should you require additional information, my point of contact is Ms. Clarissa Reberkenny, Director, Technology Management, Integration and Standards. Ms. Reberkenny can be reached at (703) 681-8823 or by e-mail at Clarissa.Reberkenny@tma.osd.mil.

Gary A. Christopherson
Principal Deputy Assistant Secretary

Attachment:
As stated

Attachment 1

OASD(HA) Responses to the DoD Inspector General Findings

IG Finding:
Establish procedures requiring Automated Information System (AIS) project managers to promptly report slippages in AIS completion dates to the year 2000 program office.

OASD(HA) Response:
Procedures were put into place to ensure AIS project managers report accurate schedule information. AIS Y2K project plans were updated and entered into an enterprise-wide project management tool (Primavera P3). Actions were taken to provide managers at all levels access to current schedule performance data. The Y2K Project Office uses this data to prepare all required reports ensuring that reported data is current and accurate.

IG Finding:
Prepare contingency plans for all automated information systems that are two or more months behind the required completion dates, in accordance with the DoD Year 2000 management plan.

OASD(HA) Response:
The Office of the Assistant Secretary of Defense (Health Affairs) (OASD(HA)) has prepared and distributed the draft version of a contingency planning and continuity of operations planning guide. Since a DoD guide for contingency plans has not been developed, OASD(HA) will provide copies to the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) and other agencies for their use. The OASD(HA) Information Management Program Review Board directed contingency plans for mission critical AISs to be complete by 1 October 98. In addition, an independent validation of contingency plans and continuity of operations plans has been incorporated into our compliance assurance process.

IG Finding:
Prepare interface agreements for AISs in accordance with the DoD Year 2000 management plan.

OASD(HA) Response:
As of 23 September 1998, 99 percent of required interface agreements have been completed. A quality review process and checklist was initiated and incorporated into our compliance assurance process. All agreements have been reviewed and corrective actions required have been provided to the AIS program managers.

Attachment

IG Finding:
Monitor systems in which year 2000 fixes and AIS functionality upgrades have been combined, and take the actions necessary to ensure that slippage does not occur in completing year 2000 compliance in mission critical systems.

OASD(HA) Response:
Actions were initiated to accelerate timelines to meet DoD mandated completion dates for our flagship AIS, the Composite Health Care System, and reviews were set in motion to ensure all AIS schedules are consistent with DoD timelines, regardless of the complexity of the software.

IG Finding:
Determine where the AIS products purchased under the SHARP-G Program and D/SIDDOMS (contracts DAW01-95-D-0024 and DAW01-95-D-0025) are being used with mission critical systems and do the appropriate Y2K testing to mitigate risks.

OASD(HA) Response:
All components (hardware, software, and operating system software) of MHS AIS's are being validated for Y2K compliance. All components purchased under contracts, with or without Y2K clauses, will be tested as part of the AIS compliance assurance process.

IG Finding:
Perform sample tests of biomedical devices for Y2K compliance, where possible, of biomedical devices deemed Y2K compliant by the manufacturer.

OASD(HA) Response:
OASD(HA) is fully committed to testing biomedical devices. To supplement manufacturer's compliance assurances, selected mission critical biomedical devices will be tested to ensure Y2K compliance.

IG Finding:
Issue direction to the Military Department Surgeons General that require medical treatment facility commanders to coordinate with installation commanders to ensure that critical medical facility devices are given priority in the Y2K compliance process.

OASD(HA) Response:
The Military Services Deputy Surgeons General have prepared and distributed Y2K medical facility guidance. This guidance includes a requirement to coordinate medical facility issues and concerns with local installation commanders and facility engineering organizations to emphasize the priority of resolving medical facility Y2K problems.

2   Attachment

OASD(HA) Responses to the
DoD Inspector General Findings and Recommendations

IG Finding:
Recommendations and Management Actions. Perform sample tests for year 2000 compliance, where possible, of biomedical devices deemed year 2000 compliant by the manufacturer.

OASD(HA) Response: concur
OASD(HA) is working in conjunction with the American Hospital Association and biomedical equipment manufacturers to outline criteria and methods to evaluate the manufacturers procedures used to ensure compliance. A consensus within the health community regarding biomedical equipment testing is currently being resolved. We will work with the biomedical equipment manufacturers to establish procedures for validating Y2K compliance of critical biomedical equipment.

IG Finding:
Recommendations and Management Actions. Include the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) year 2000 (Y2K) requirements in all delivery orders for automated information systems under the Defense Medical Information System/Systems Integration, Design, Development, Operations and Maintenance Services (D/SIDDOMS) program.

OASD(HA) Response: concur
The D/SIDDOMS I contract was solicited, negotiated, and awarded prior to the requirement of Y2K compliance language into contracts. The contracts will be transitioned to the recently awarded D/SIDDOMS II contract by March 1999. The D/SIDDOMS II contract meets the requirement for Y2K specific language. Until the transition is complete, all new Delivery Orders awarded under D/SIDDOMS I will include Y2K language.

Attachment 2

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Audit Team Members

The Readiness and Logistics Support Directorate, Office of the Assistant Inspector General for Auditing, DoD, produced this report.

Shelton R. Young
Raymond D. Kidd
Michael A. Joseph
Sanford W. Tomlin
I. Eugene Etheridge
James A. O'Connell
Robert T. Briggs
G. Paul Johnson